

CLAIMS

1. A heat exchanger comprising:

a core (4) in the aggregate of a multiplicity of
5 juxtaposed flat tubes (3), with a heating fluid (1) flowing
through one of the inside and the outside of the flat tubes
(3), with a fluid to be heated (2) flowing through the other;

a pair of discoidal tube plates (5) including tube
insertion apertures to which the flat tubes (3) are jointed
10 at their respective opposed ends;

an inner cylinder (6) having a rectangular
cross-section enclosing the outer periphery of the core (4)
except the vicinities of the pair of tube plates (5);

a first baffle plate (7) having a circular periphery
15 fitted to the outer periphery at one end of the inner cylinder
(6), the first baffle plate (7) confronting one of the pair
of tube plates (5);

a circular outer cylinder (10) having one end joined
to the first baffle plate (7) and the other end joined to a
20 second baffle plate (8) with a circular periphery disposed
on the outer periphery at the other end of the inner cylinder
(6) or to the other of the pair of tube plates (5), the outer
cylinder (10) including on its outer periphery a corrugated
portion that is thermally expandable in the axial direction;

25 and

an outlet (11) and an inlet (12) for the fluid to be
heated (2) or the heating fluid (1) disposed at the both end

portions of the core (4) between the opposed ends of the inner cylinder (6) and the pair of tube plates (5), wherein

a lead-in port (13) and a lead-out port (14) for the heating fluid (1) or the fluid to be heated (2) are connected
5 respectively to the pair of tube plates (5).

2. The heat exchanger of claim 1, wherein

the second baffle plate (8) having the circular outer periphery is fitted at its rectangular inner periphery to the
10 outer periphery at the other end of the inner cylinder (6) in such a manner as to be slightly displaceable in the axial direction of the inner cylinder (6) confronting the other of the pair of tube plates (5), wherein

the outer cylinder (10) is firmly connected at the other
15 end thereof to the outer periphery of the second baffle plate (8), wherein

the first baffle plate (7) is fitted at its rectangular inner periphery to the outer periphery at one end of the inner cylinder (6) with the first baffle plate (7) being secured
20 to the outer cylinder (10), and wherein

the heat exchanger further comprises a first (15) and a second (16) cylindrical tank bodies whose opposed ends are firmly connected respectively to the tube plates (5) and to the first (7) and the second (8) baffle plates confronting
25 the tube plates (5).